

ABSTRACT OF THE DISCLOSURE

The present invention provides a cold-formed spring having high fatigue strength and high corrosion fatigue strength, a specific type of steel for such a spring, and a method
5 of manufacturing such a cold-formed coil spring. The spring according to the present invention is made from a steel material containing, in weight percentage, 0.45 to 0.52% of C, 1.80 to 2.00% of Si, 0.30 to 0.80% of Ni, 0.15 to 0.35% of Cr and 0.15 to 0.30% of V, with Fe substantially constituting the remaining percentage. A wire is produced from the steel, and the wire is subjected to a high-frequency heating process, whereby the wire is
10 hardened at a temperature of 920 to 1040 °C for 5 to 10 seconds, and then tempered at a temperature of 450 to 550 °C for 5 to 20 seconds so that its hardness becomes 50.5 to 53.5 HRC. Finally, the wire undergoes a shot peening process so that its residual stress at 0.2 mm depth from the surface becomes –600 MPa or higher.